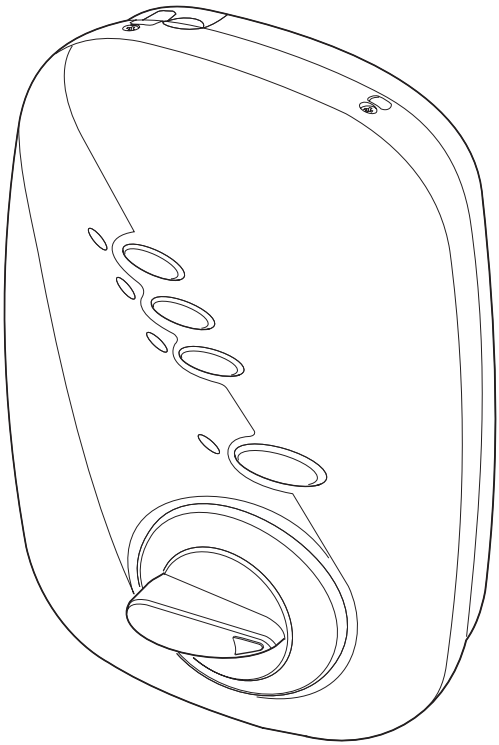
mira

Extreme THERMOSTATIC



THERMOSTATIC
POWER SHOWER
Installation and User Guide

These instructions are to be left with the user

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INTRODUCTION

Thank you for purchasing a quality Mira product. To enjoy the full potential of your new shower, please take time to read this guide thoroughly, and keep it handy for future reference.

The Mira Extreme Thermostatic is a surface mounted all-in-one thermostatic power shower. It is designed for use with a mains voltage electrical supply and gravity fed hot and cold water supplies. It features a built-in pump unit, thermostatic mixer assembly and separate power, flow buttons and temperature control.

The thermostatic mixer assembly responds to changes in incoming water temperature to maintain the showering temperature selected. The temperature control is preset to give a maximum showering temperature of 41°C. However, it can be adjusted to suit installation or user requirements.

An override button is fitted to the temperature control. This allows the user to override the maximum temperature and select higher showering temperatures. The button can be disabled, if required.

The product is fitted with a 15 mm dual entry push-fit inlet manifold which allows pipe connections to the top, bottom or rear of the power shower. The inlet manifold also contains inlet filters and check valves.

The shower control is supplied with Mira Logic power shower fittings. These fittings consist of an adjustable spray handset with four different spray actions (start, champagne, massage and economy), flexible hose, adjustable clamp bracket assembly, slide bar and supports, hose retaining ring and wall mounted soap dish. The fittings are available in a white/chrome or all white finish.

The Mira Extreme is not suitable for use in institutional/commercial applications. It **must not** be used with mains water pressure applications; for example, instantaneous electric heaters, instantaneous gas water heaters, unvented mains pressure systems, pumped shower systems and some combination-type storage systems.

If you experience any difficulty with the installation or operation of your new power shower, please refer to **'Fault Diagnosis'**, before contacting Kohler Mira Ltd. Our contact details can be found on the back cover of this guide.

Guarantee

Mira Showers guarantee the Mira Extreme against any defect in materials or workmanship for a period of **one** year from the date of purchase.
For terms and conditions refer to the back cover of this guide.

Recommended Usage

Domestic	✓
Light Commercial	✓
Heavy Commercial	×
Healthcare	×

Patents
UK: 2 340 210, 2 392 223, 2 392 224, 2 392 225, 2 421 297
USA: 7 240 850

Patent Applications:
Euro: 03254070.0
USA: 2007-0221740-A1

IMPORTANT SAFETY INFORMATION

Warning!

1. Products manufactured by us are safe and without risk provided they are installed, used and maintained in good working order in accordance with our instructions and recommendations.
2. **THIS APPLIANCE MUST BE EARTHED. MAKE SURE THE SUPPLEMENTARY BONDING COMPLIES WITH THE "REQUIREMENTS FOR ELECTRICAL INSTALLATIONS" BS7671**. This electric shower is intended to be permanently connected to the fixed electrical wiring of the mains system.
   In accordance with the current edition of 'The Plugs and Sockets etc. (Safety) Regulations in force at the time of installation, the Appliance is intended to be permanently connected to the fixed electrical wiring of the mains system. A means for electrical isolation of the appliance shall be provided in the fixed wiring in accordance with local wiring regulations.
3. A separate, permanently connected supply must be taken from the consumer unit to the appliance through a double-pole switch, which has at least 3 mm contact separation. The switch can be a ceiling mounted pullcord type within the shower room or a wall mounted switch fitted in the applicable zone area.
4. This appliance must be provided with means for disconnection that is incorporated into the fixed wiring in accordance with the relevant local wiring regulations.
5. This product is suitable for installation within Zone 1 and is rated IP X4.
6. Switch off the appliance at electrical isolating switch when not in use. This is for safety and is recommended with all electrical appliances.
7. **DO NOT CONNECT THE APPLIANCE TO A MAINS-FED WATER SUPPLY**. Such a connection will damage the Appliance, and is not covered under the manufacturer's guarantee.
8. The Appliance must not be fitted where it may be exposed to freezing conditions. Make sure that any pipework that could become frozen is properly insulated.
9. To ensure the case and other components are not put under strain during installation always provide mechanical support when making plumbing connections. Upon completion of the installation ensure connections and back case are not under any stress due to misaligned pipework or electrical cables.
10. **DO NOT** switch on if there is a possibility that the water in the appliance is frozen, isolate the electrical and water supply before removing the cover. Allow the Appliance to thaw before using again.

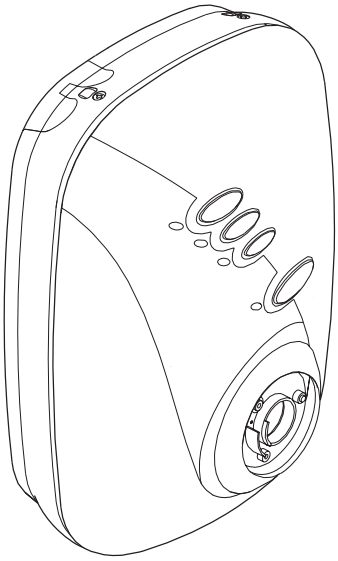
11. The water supplies to this product must be isolated if the product is not to be used for a long period of time. If the product or pipework is at risk of freezing during this period they should also be drained of water.
12. **DO NOT** commission or operate the Appliance if water leaks from the unit, maintenance will be required before the Appliance can be safely used.
13. If the shower is dismantled during installation or servicing then upon completion the product must be inspected to ensure there are no leaks.
14. **DO NOT** fit any form of outlet flow control as the outlet acts as a vent for the tank body. Only Mira recommended outlet fittings should be used.
15. This Shower control is not a thermostatic and does not sense supply temperature or pressure variations. Therefore, inlet water temperatures and pressures especially the hot, should be relatively constant.
16. The temperature control can be turned from FULL HOT to FULL COLD. As such, turning the control to full hot will deliver water at the hot water storage temperature.
17. There are no user serviceable components beneath the cover of the Appliance. Only a competent tradesperson should remove the cover. We recommend any maintenance work is carried out by a Mira Service Engineer or qualified tradesperson.
18. Turn off the electrical and water supplies before removing the cover. The electricity must be turned off at the mains and, if applicable, the appropriate circuit fuse removed.
19. Mains connections are exposed when the cover is removed.
20. Moving parts are exposed when the cover is removed.
21. Isolate the electricity and water supplies and refer to "**To contact us**", on the back page of this guide, if any of the following conditions occur:
    - The cover is not correctly fitted and water has entered the case
    - The case is damaged
    - The Appliance begins to make an odd noise, smell or smoke
    - The Appliance shows signs of a distinct change in performance, indicating a need for maintenance
    - The Appliance is frozen
22. The showerhead must be de-scaled regularly.
23. DO NOT; Position the handset to spray water directly on to the appliance. Eg.When cleaning shower control.
24. Make sure all electrical connections are tight, to prevent overheating.
25. Unless otherwise stated, electrical equipment such as extractor fans and pumps must not be connected via this product.

Caution!

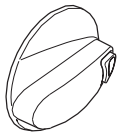
1. **Read all of these instructions and retain this guide for later use**.
2. Pass on this guide in the event of change of ownership of the installation site.
3. Follow all warnings, cautions and instructions contained in this guide, and on or inside the shower
4. Installation must be carried out in accordance with these instructions, and must be conducted by designated, qualified and competent personnel.
5. Make sure that you fully understand how to operate this shower and make sure that it is properly maintained in accordance with the instructions given in this manual.
6. The showerhead must be de-scaled regularly
7. The electrical installation must comply to 'BS 7671- "Requirements for Electrical Installations" commonly referred to as the IEE Wiring Regulations - Part 7, or any particular regulations and practices, specified by the local electricity supply company. The installation should be carried out by an electrician or contractor who is registered with, or is a member of an association such as:
   - National Inspection Council for Electrical Installation and Contracting (NICEIC), throughout the UK
   - The Electrical Contractors Association (ECA), England and Wales
   - The Electrical Contractors Association of Scotland (ECAS)
8. The plumbing installation must comply with Water Supply Regulations/Bye-laws (Scotland), Building Regulations or any particular regulations and practices, specified by the local water company or water undertakers. The installation should be carried out by a plumber or contractor who is registered with, or is a member of an association such as:
   - Institute of Plumbing (IOP), throughout the UK
   - National Association of Plumbing, Heating and Mechanical Services Contractors (NAPH & MSC), England and Wales
   - Scottish and Northern Ireland Plumbing Employers' Federation (SNIPEF), Scotland and Northern Ireland
9. This applianceis not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning the use of the appliance by a person responsible for their safety.
10. Children should be supervised to make sure that they do not play with the appliance.
11. Sunburn or skin conditions can increase your sensitivity to hot water. Make sure that you set the shower to cooler temperature.
12. Having completed the installation, make sure that the user is familiar with the operation of the appliance.
13. When the Appliance has reached the end of its serviceable life, it should be disposed of in a safe manner, in accordance with current local authority recycling, or waste disposal policy.

PACK CONTENTS

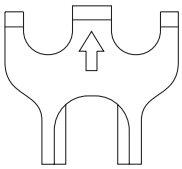
Tick the appropriate boxes to familiarise yourself with the part names and to confirm that the parts are included.



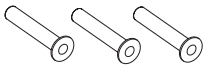
❑ 1 x Mira Extreme



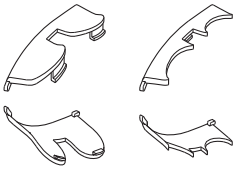
❑ 1 x Temperature Knob



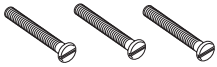
❑ 1 x Push-Fit Release Tool



❑ 3 x Rubber Wall Plugs



❑ 4 x Case Inserts



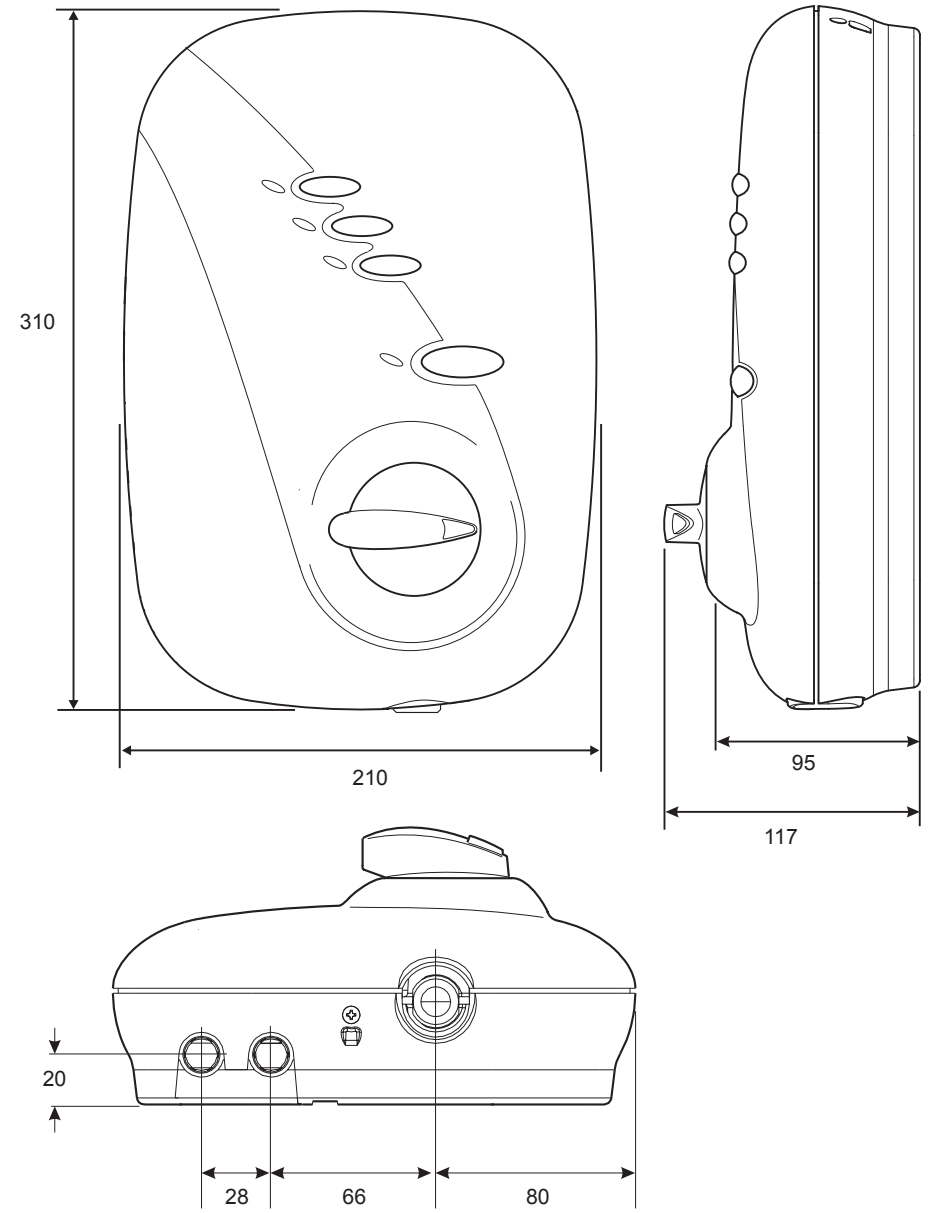
❑ 3 x Fixing Screws

❑ 3 x Rubber Feet

Documentation

❑ 1 x Guarantee Registration Document
❑ 1 x Installer/Product Check List

DIMENSIONS



All dimensions in millimetres

SPECIFICATIONS

1. General

1.1 Ambient temperature – Maximum recommended ambient temperature for the appliance is 30°C.

1.2 Maximum recommended hot water temperature – 65°C.

Warning! For safety reasons, the maximum stored hot water temperature should be set to between 60 and 65°C. Such temperatures are considered sufficient to meet all normal requirements and will also minimise the deposition of scale in hard water areas.

1.3 Temperature control – To obtain the full listed performance, the Mira Extreme should be installed, operated and maintained in accordance with this guide.

1.4 The performance outlined below is achieved with a showering temperature of between 35° and 45°C and water supplies of 15°C cold and 65°C hot with nominally equal pressures.

1.4.1 The maximum temperature stop is set to 41°C. Depressing the override button overrides the maximum temperature and the showering temperature can be increased by 5°C to approximately 46°C.

1.4.1 The blended water temperature is maintained within 1°C with a 10°C change in the hot or cold water supply.

1.4.2 The sensor effects a shut down to seepage in approximately 2 seconds if the cold supply fails.

1.4.3 Shut down to seepage is achieved even if the hot supply is only 12°C above the blend temperature.

1.4.4 The blended water temperature is maintained within 1.5°C when the pressure between inlet and outlet is halved (defined as a pressure loss ratio of 2:1) on either the hot or cold side.

1.5 Maximum static inlet pressure – 1 bar or 10 m (supplies must be gravity-fed at nominally equal pressures). Refer to section: '**Installation Requirements – Plumbing**'.

1.6 Minimum static inlet pressure – 0.008 bar or 80 mm (required to prime the integral centrifugal pump). The minimum static pressure will increase for long supply pipe lengths. Refer to section: '**Installation Requirements – Plumbing'**.

1.7 Maximum recommended inlet pressure – 0.5 bar or 5 m (supplies must be gravity-fed at nominally equal pressures).

1.8 Duty Cycle – The Mira Extreme motor is continuously rated. The motor is fitted with a self-resetting thermal trip protection, designed to operate if motor temperatures become too high due to abnormally high supply voltages.

1.10 Noise – The Mira Extreme is supplied with anti-vibration rubber feet and rubber wall plugs that isolate the unit from the wall in order to minimize the amount of noise transmitted. The type of wall the Mira Extreme is fixed to will also affect the perceived noise level; solid walls will provide a quieter operation.

2. Plumbing

2.1 Inlet – 15 mm Push-fit inlet manifold.

2.2 Outlet – ½" BSP to BS2779.

3. Electrical

3.1 Appliance power supply – 230–240 V, 50 Hz, fused at 3 Amps, via a double pole switched fused connection unit (not supplied) with a minimum 3mm contact separation in each pole.

3.2 Power supply connection – The Mira Extreme is fitted with a terminal block which will accept cable up to 2.5 mm^2. Minimum cable size (cross-sectional area) required under normal installation conditions is 1 mm^2.

3.3 Absorbed power – Approximately 150 Watts under normal working conditions.

4. Standards and Approvals

4.1 The Mira Extreme complies with all relevant directives for CE marking.

INSTALLATION REQUIREMENTS

1. General

1.1 Do not take risks with plumbing or electrical equipment.

1.2 Do not install the Mira Extreme in a position where it could become frozen.

1.3 Isolate electrical and water supplies before proceeding with the installation of the Mira Extreme.

1.4 The shower control must be fed from a cold water storage cistern and hot water cylinder providing nominally equal pressures.

1.5 The installation must be carried out by a competent installer.

1.6 Decide on a suitable position for the Mira Extreme (minimum distance of 200 mm from the ceiling to allow for fitting and removal of the cover). The position of the Mira Extreme and the shower fittings must provide a minimum gap of 25 mm between the spillover level of the shower tray/bath and the handset. This is to prevent backsiphonage.

1.7 The Mira Extreme must be fitted onto the finished wall surface; that is, on top of the tiles. Do not fit the Mira Extreme to the wall and then tile up to the sides of the casing (Small pillars moulded on the back of the case allow air to circulate and water to drain from behind the appliance).

1.8 When fitting the Mira Extreme with wall entry inlet supplies, it is recommended that the supply pipework is sealed to the wall to prevent water from leaking back into the wall.

1.9 In solid wall installations, the supply pipework should be installed within ducting to allow some free lateral movement when making supply connections.

2. Electrical

2.1 **Do not turn on the electrical supply until the plumbing has been completed.**

2.2 The mains supply must be 230–240 V at 50 Hz connected to the appliance via a double pole switched 3 Amp fused connection unit (not supplied) with a minimum 3 mm contact separation gap in each pole.

2.3 Fuses do not give personal protection against electric shock.

2.4 The Mira Extreme **must be earthed** by connecting the supply-cable earth conductor to the earth terminal.

Supplementary bonding: Within the bathroom or shower room, all accessible conductive parts of electrical equipment and extraneous conductive parts that are likely to introduce earth potential, must be electrically bonded to earth using a minimum cable size of 4.0 mm^2 if the cable is not mechanically protected (2.5 mm^2 if mechanically protected).

2.5 The minimum cable size (cross-sectional area) required is 1 mm^2 under normal conditions of installation.

2.6 A 30mA residual current device (RCD) must be fitted. This may be part of the consumer unit or a separate unit.

3. Plumbing

3.1 **Do not** use excessive force when making connections to the flexible hoses or handset—finger tightness is sufficient.

3.2 **Do not** solder supply pipework with the Mira Extreme connected. Heat transmitted through the pipework will melt the inlet manifold.

3.3 The storage cistern should have a minimum storage capacity of 230 litres to provide adequate showering time. Insufficient storage may result in the pump being run dry.

3.4 Avoid layouts where the hose will be sharply kinked. This may reduce the life of the hose.

3.5 No form of flow control should be fitted to the outlet of the appliance.

3.6 Fit non-restrictive (free-flowing) isolating valves to the inlet pipework in an easily accessible position. These valves will allow the water supply to be turned off quickly to the Mira Extreme, for maintenance purposes.

3.7 When using surface mounted inlet supply pipework the use of polyethylene plastic pipe suitable for hot water is recommended to enhance the appearance of the finished installation. Internal pipe supports (not supplied) should be used with this type of pipe.

3.8 Only use the Mira showerhead supplied with this appliance.

3.9 If the appliance is installed on a common supply ensure the appliance is the first take-off from the supply and is not influenced by the operation of any other appliance.

3.10 If the appliance is installed on a common supply which feeds an adjacent tap, the maximum static inlet pressure for the appliance will, under certain circumstances, be exceeded. The action of closing the tap can cause a pulse in the supply pressure which will result in damage to the appliance. This can be resolved by the installation of a suitably sized mini expansion vessel, sited as close as possible to the tap and pressurised to 0.5 bar.

3.11 Long pipe runs and excessive use of 90° elbows will significantly reduce the head available to supply the Mira Extreme. If the effective head is less than **80 mm** then the expected flow rate may not be achieved and air may be drawn into the hot supply from the vent pipe, causing spluttering and temperature fluctuations at the showerhead.

Use the table below to calculate the actual head of water (x) needed in your installation.

A = Total length of 15 mm pipe in hot water supply pipe run *

B = Total length of 22 mm pipe in hot water supply pipe run *

C = Total length of 15 mm pipe in cold water supply pipe run *

D = Total length of 22 mm pipe in cold water supply pipe run *

* Measure from the base of the cold water cistern to the relevant inlet port on the Mira Extreme.

Size	Hot Water Supply			Cold Water Supply		
	Pipe Run / Qty of Elbows		Head Loss (mm)	Pipe Run / Qty of Elbows		Head Loss (mm)
15 mm Pipe	A x 120	..... x 120		C x 120	..... x 120	
22 mm Pipe	B x 20	..... x 20		D x 20	..... x 20	
15 mm Elbow	No of Elbows	..... x 55		No of Elbows	..... x 55	
22 mm Elbow	No of Elbows	..... x 15		No of Elbows	..... x 15	
	Add the minimum effective head required		+80	Add the minimum effective head required		+80
	Required head of water = x mm			Required head of water = x mm		

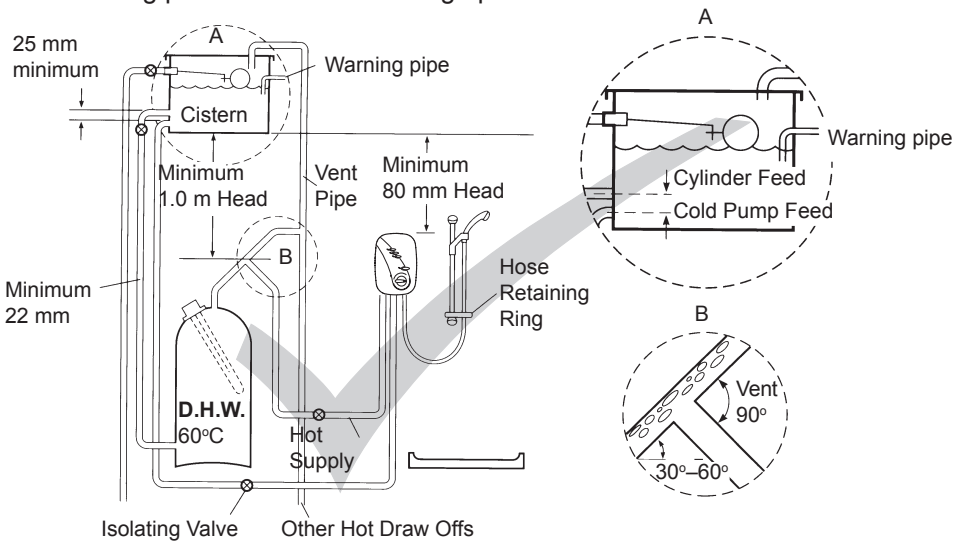
Example: With A = 1.5 m, B = 2.5 m, C = 2.2 m, D = 0 m.

Size	Hot Water Supply			Cold Water Supply		
	Pipe Run / Qty of Elbows		Head Loss (mm)	Pipe Run / Qty of Elbows		Head Loss (mm)
15 mm Pipe	A x 120	**1.5 m** x 120	**180**	C x 120	**2.2 m** x 120	**264**
22 mm Pipe	B x 20	**2.5 m** x 20	**50**	D x 20	**0 m** x 20	**0**
15 mm Elbow	No of Elbows	**3** x 55	**165**	No of Elbows	**3** x 55	**165**
22 mm Elbow	No of Elbows	**2** x 15	**30**	No of Elbows	**0** x 15	**0**
	Add the minimum effective head required		**+80**	Add the minimum effective head required		**+80**
	Required head of water = x mm		**505**	Required head of water = x mm		**509**

4. Installation Diagrams

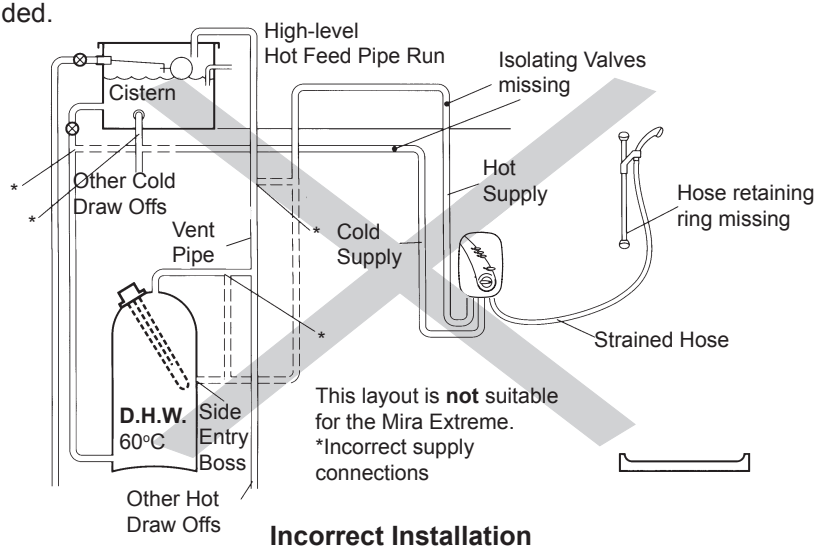
To prevent operational difficulties, the feed from the cylinder should be as illustrated below. Side entry cylinder bosses are not recommended because:

- A drop in cylinder water level could expose a top entry immersion element if fitted.
- Air-in-water solution gathers at the edge of the cylinder and in the centre, during the heating process before travelling up the vent.



Correct Installation

A high level hot feed pipe run as illustrated below will result in air locking and should be avoided.



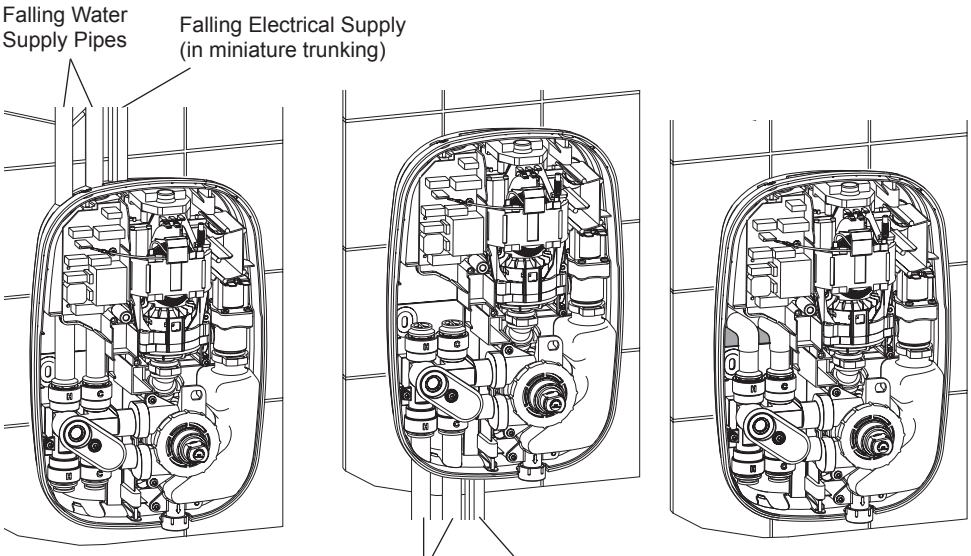
Incorrect Installation

INSTALLATION

1. Before You Start

Decide where to site the Mira Extreme power shower. It should be positioned at a height convenient for all the family. The fittings should be fitted so the handset sprays away from the Mira Extreme, either down the centre line of the bath or across the shower cubicle opening.

The Mira Extreme can support top, bottom or wall entry configurations for both the water and power supplies. Choose the appropriate configuration for your installation. Refer to section: **'Installation, Configuring the Inlet Supplies'**.


Falling Water Supply Pipes
Falling Electrical Supply (in miniature trunking)
Rising Water Supply Pipes
Rising Electrical Supply (in miniature trunking)

Top Entry Supply Configuration

Bottom Entry Supply Configuration

Wall Entry Supply Configuration

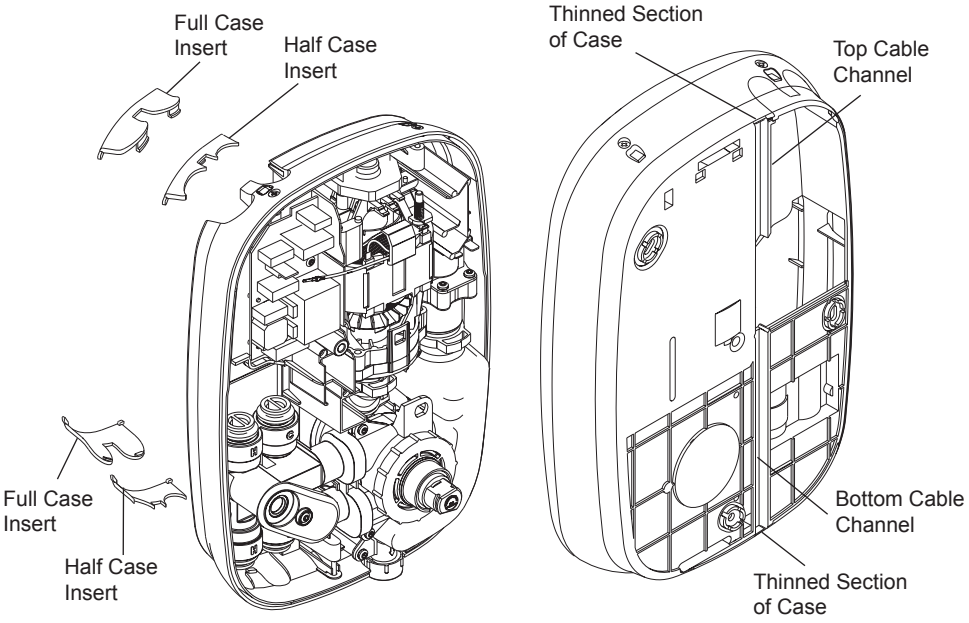
2. Configuring the Inlet Supplies

The Mira Extreme is supplied with blanking plugs fitted to all four ports of the inlet manifold. The pipework configuration will determine which blanking plugs and case inserts supplied must be fitted to the case.

Use the table below for reference.

Supply Pipework	Inlet Manifold Ports	Case Inserts
Top Entry Inlet	Fit blanking plugs to bottom ports of the inlet manifold.	Fit half insert in the top inlet of the case. Fit full insert in the bottom inlet of the case.
Bottom Entry Inlet	Fit blanking plugs to top ports of the inlet manifold.	Fit full insert in the top inlet of the case. Fit half insert in the bottom inlet of the case.
Wall Entry Inlet	Fit blanking plugs to bottom ports of the inlet manifold.	Fit full insert in the top inlet of the case. Fit full insert in the bottom inlet of the case.

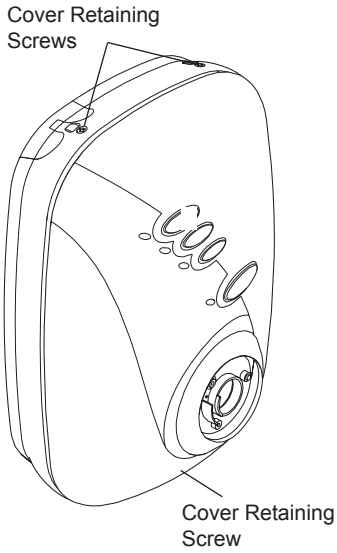
The Mira Extreme allows for electrical cable entry from the top, bottom or back of the case. For top and bottom entries a thinned section of the case, covering the top or the bottom cable channel, must be removed before the cable can be fitted.



This procedure removes the top two blanking plugs from the inlet manifold for top or wall entry pipe configurations. Using this procedure as a guide, adjust the steps for bottom entry configurations as appropriate.

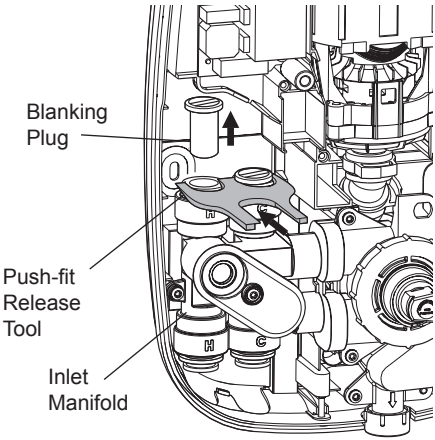
2.1 Unscrew the three cover retaining screws sufficiently and carefully remove the cover.

Note! The cover retaining screws are captive and need not be removed.



2.2 Insert the push-fit release tool between the flange of the blanking plug and the collet for each of the top ports for the inlet manifold, and lever the plugs outward.

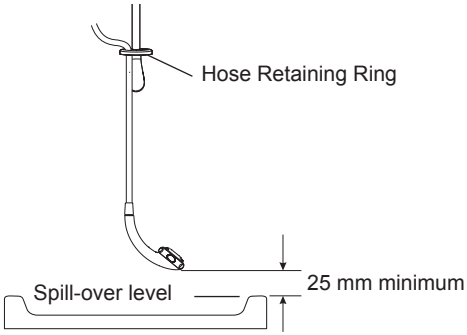
Whilst holding back on the collet, pull out each appropriate blanking plug by hand.



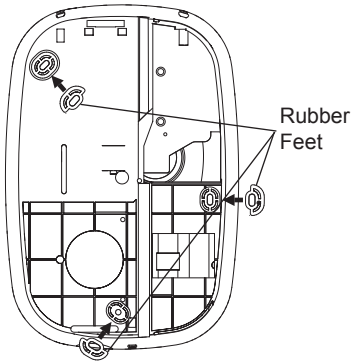
3. Shower Installation

The following installation procedure is based on a bottom entry pipework configuration (rising hot and cold water supplies) and a top entry electrical supply configuration (via miniature trunking from above). Using this procedure as a guide, adjust the steps for alternative water supply or electrical supply configurations as appropriate.

3.1 Decide on a suitable location for the Mira Extreme **avoiding buried cables and pipes**. Leave a **minimum distance of 200 mm from the ceiling to** allow for the fitting and removal of the cover. Make sure that when the hose retaining ring is placed on the lowest position on the slide bar, there is a **minimum distance of 25 mm between the handset and the bath or shower tray spillover** when the handset is hanging down.



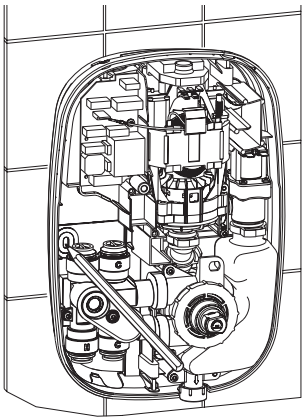
3.2 Fit the three rubber feet into the recesses in the case as shown. The feet will reduce the noise transmitted by the power shower through the wall.



3.3 Using a spirit level, position the Mira Extreme on the wall and mark through the three fixing points.

Note! Special consideration should be given to the strength of the fixing arrangements when installing on to a dry lined, stud partition or dry partition wall structure. Installers may wish to obtain alternative proprietary cavity fixings, or choose other options such as fabricating rear supports using wooden blocks; however, these methods of fixing are beyond the scope of this guide.

Warning! Make sure the marked fixing points are not inline with buried cables and pipes before drilling.



3.4 Drill 9.5 mm holes and fit the rubber wall plugs supplied.

3.5 Cut away and trim the thinned section in the top of the case to allow the electrical supply cable to run down cable channel in the back of the case.

3.6 Run the electrical supply cable in surface mounted miniature trunking (not supplied). Allow sufficient cable to connect to the Mira Extreme terminal block (approximately 275 mm). Strip back approximately 30 mm of outer cable insulation.

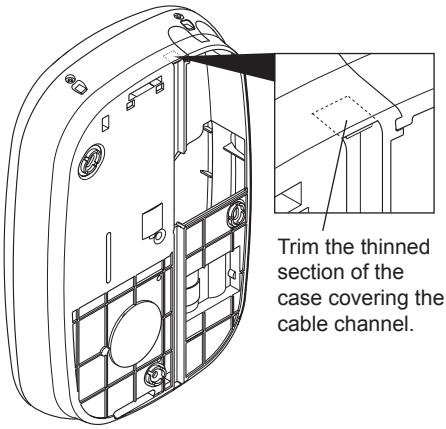
3.7 Hot and cold inlet supply connections as marked are: **Hot - Left, Cold - Right**.

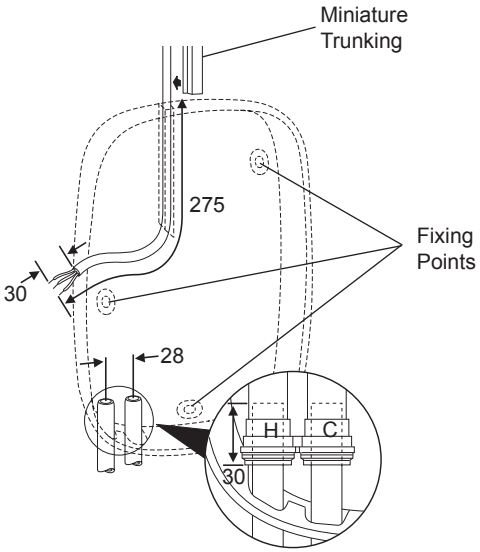
Note! Supply connections must not be connected in reverse.

Run the hot and cold water supply pipes at 28 mm centres, make sure that the pipe ends project into the Mira Extreme by 30 mm to allow connection into the inlet manifold.

Caution! Do not use stainless steel piping for inlet pipework.

Caution! If chrome-plated copper pipework is used then all traces of chrome plate must be removed from the connecting surfaces. If the chrome is not completely removed then the inlet manifold collet will fail to grip the supply pipe and the pipes will be forced out of the inlet manifold due to the water supply pressure.





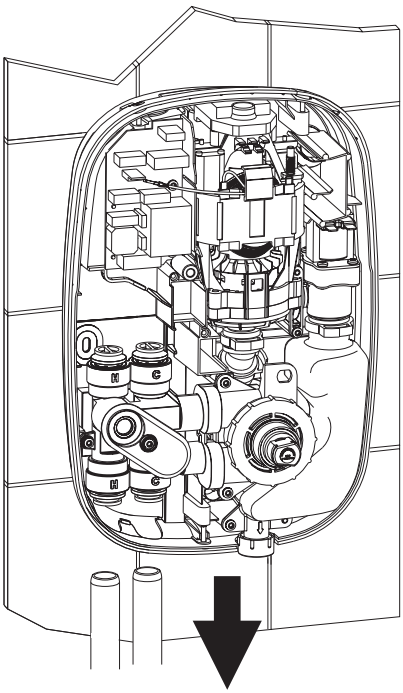
All dimensions in millimetres

3.8 Make sure that the end of the supply pipework is cut squarely and **free from burrs** which can damage the inlet manifold seals.

Chamfer the end of the pipe to assist insertion into the fitting and prevent the 'O' seal tearing.

Warning! Do not insert fingers into the push-fit connectors as this can result in injury.

Caution! Thoroughly flush the incoming hot and cold water supply pipes to remove debris before connecting the Mira Extreme shower.

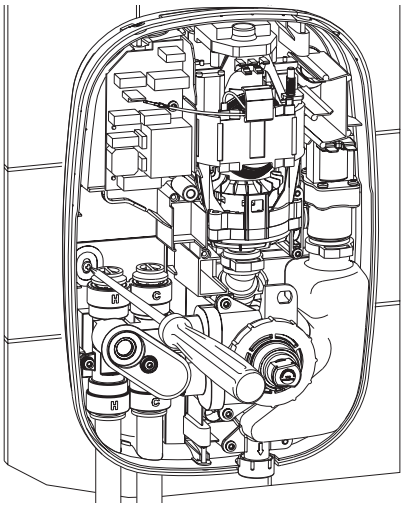


3.9 Push the supply pipework inside the inlet manifold until resistance is felt. **DO NOT FORCE!**

Note! PTFE tape or liquid jointing is **not** required to assist connection.

3.10 The collet and 'O' seal will automatically make a hydraulic seal.

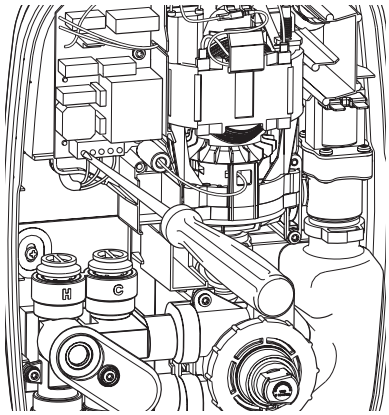
Warning! This Mira Extreme **must** be fixed to the wall at all three fixing points. The fixing holes are elongated to assist in vertical and horizontal alignment.



3.11 Screw the Mira Extreme to the wall using either the supplied wall screws or alternative fixings depending on the wall structure. **Do not overtighten**.

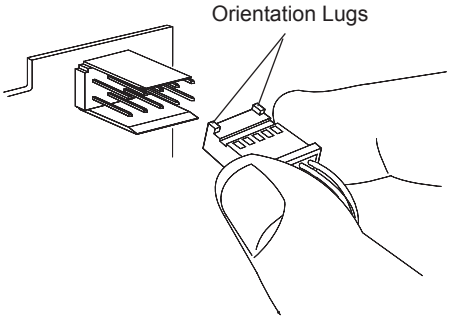
Make sure that the electrical supply cable is correctly seated in the channel in the back of the case.

3.12 Connect the live, neutral and earth conductors of the electrical supply cable to the terminal block. The supply cable earth connector should be sleeved.



3.13 To refit the cover, replace the cover electrical connection on the PCB by gripping the sides of the connector between two fingers and easing the connector into position by moving from side to side.

Note! Two lugs on the top of the connector are provided to ensure the correct orientation (see illustration).

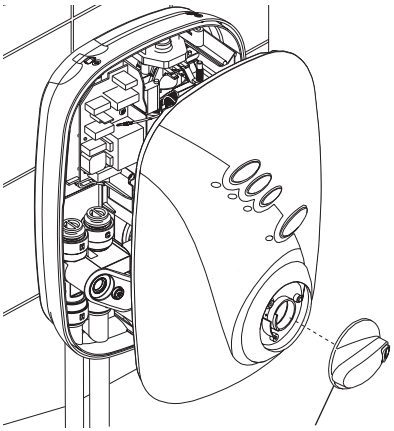


3.14 Position the cover and secure with the three cover retaining screws. **Do not over-tighten**.

3.15 Fit the temperature control knob.

3.16 This completes the installation of the **Mira Extreme**. The shower will now require commissioning. Refer to section: **'Commissioning'**.

3.17 To install the **shower fittings**, refer to your shower fittings Installation & User Guide.



COMMISSIONING

1. General Commissioning

1.1 Make sure the electrical supply is isolated and, if applicable, the appropriate circuit fuse is removed.

1.2 Connect the flexible hose from the shower fitting to the outlet of the appliance. Make sure that the hose washer is fitted.
Caution! Do not over-tighten the hose connector.

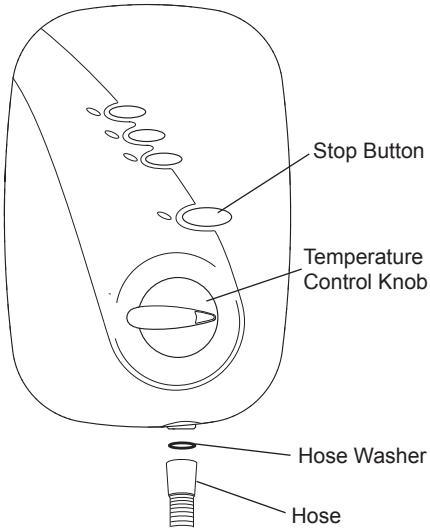
1.3 Turn the water supplies fully on at the isolating valves. Check that water is not leaking from the bottom of the case.

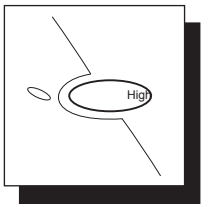
1.4 Switch on the electrical supply to the product.

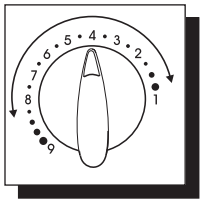
1.5 Press the top flow control button to start the shower. Check that within a few seconds the water flows freely from the shower. Press the middle and lower buttons in turn and check that the flow decreases.

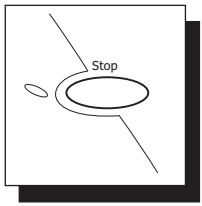
1.6 Turn the temperature knob anticlockwise to check the hot supply and clockwise to check the cold supply.

1.7 Press the **Stop** button to stop the flow of water.









2. Adjustable Maximum Temperature Setting

The Mira Extreme is fully performance tested and the maximum temperature has been set under ideal installation conditions at the factory. The temperature stop is set to 41°C and depressing the override will increase the temperature by 5°C to approximately 46°C. Site conditions and personal preference may make it necessary to reset these temperatures.

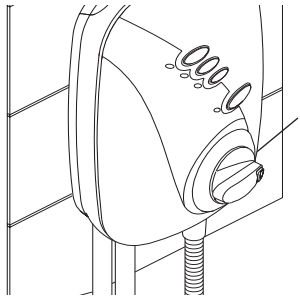
Note! An adequate supply of hot water at least 12°C above the required temperature must be available for correct operation of the shower control.

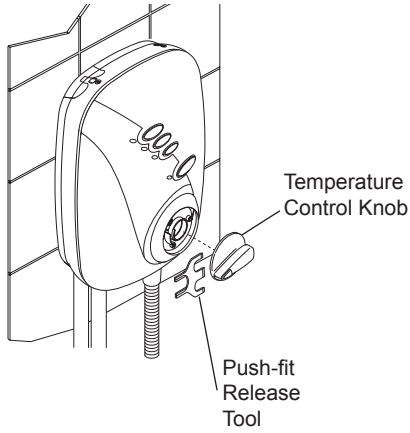
Warning! Resetting the temperature of the temperature stop will also reset the maximum temperature obtainable with the override operated.

2.1 Turn the temperature control knob anticlockwise to the maximum temperature stop. **Do not depress the override button.**

2.2 Insert the end of the push-fit tool under the temperature control knob, inline with the temperature override button, and lever off the temperature knob.

2.3 Press the upper flow control button to start the flow of water, allow the water temperature to stabilise.

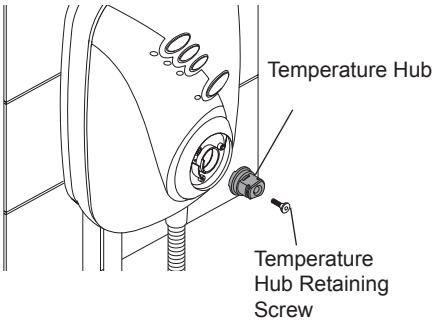




2.4 Remove the small label covering the retaining screw on the temperature hub. Unscrew the retaining screw and remove the temperature hub.

Note! This will void the factory setting.

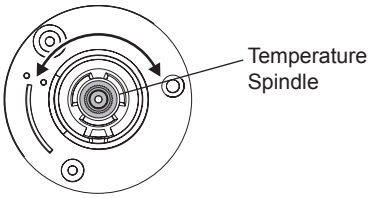
Caution! When resistance is felt **DO NOT USE FORCE** to turn the spindle any further as this is the **maximum obtainable temperature** from the appliance with the available hot water storage temperature. **FORCE** will **DAMAGE** the internal components.



2.5 Turn the temperature spindle until the required maximum water temperature is obtained.

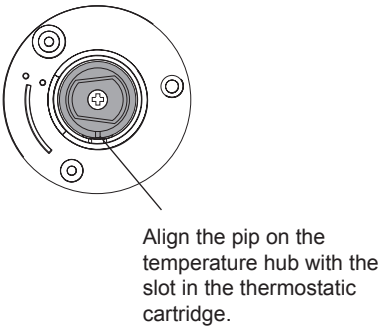
Warmer ⇒ Turn spindle anticlockwise

Cooler ⇒ Turn spindle clockwise.



2.6 Press the **Stop** button to stop the water flow.

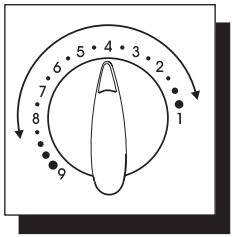
2.7 Refit the temperature hub with the pip on the temperature hub aligned to the slot on the thermostatic cartridge. Secure with the retaining screw.



2.8 Refit the temperature knob.

Caution! If resistance is felt when turning the temperature knob **DO NOT USE FORCE** to turn the knob any further as this will **DAMAGE** internal components.

2.9 Check that the temperature knob can be fully turned in both directions.



2.10 Check the maximum temperature setting. If necessary repeat the temperature adjustment until the correct setting is achieved.

3. Temperature Override Button – Disable

The Mira Extreme incorporates a temperature override button that allows the user to override the preset maximum temperature. This override button can be disabled, limiting the maximum selectable showering temperature to the preset value. This setting is recommended for the young, the elderly, the infirm, or anyone inexperienced in the correct operation of the controls.

To disable the temperature override button:

3.1 Turn the temperature control knob clockwise to full cold.

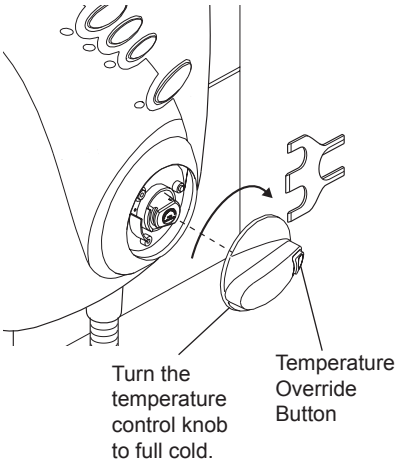
3.2 Remove the temperature knob using the push-fit release tool.

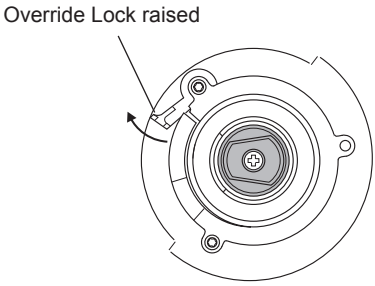
3.3 Locate the plastic temperature override lock.

3.4 Raise the override lock until it clicks into the hold position, allowing the over-ride button on the temperature control knob to bypass the stop. The temperature override button is now enabled.

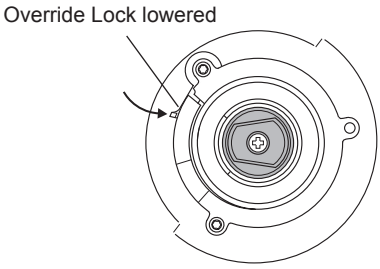
3.5 To disable the temperature override again, lower the override lock until it clicks into position.

3.6 Replace the temperature knob.





Temperature Override Button Enabled



Temperature Override Button Disabled

OPERATION

For safety reasons this appliance is fitted with an adjustable maximum temperature setting. This setting must be checked and adjusted as necessary to suit both site conditions and user's comfort. Refer to section: '**Commissioning**'.

1.1 Push the lower flow control button to start the flow of water.

1.2 Press the correct flow control knob to obtain the desired flow of water.

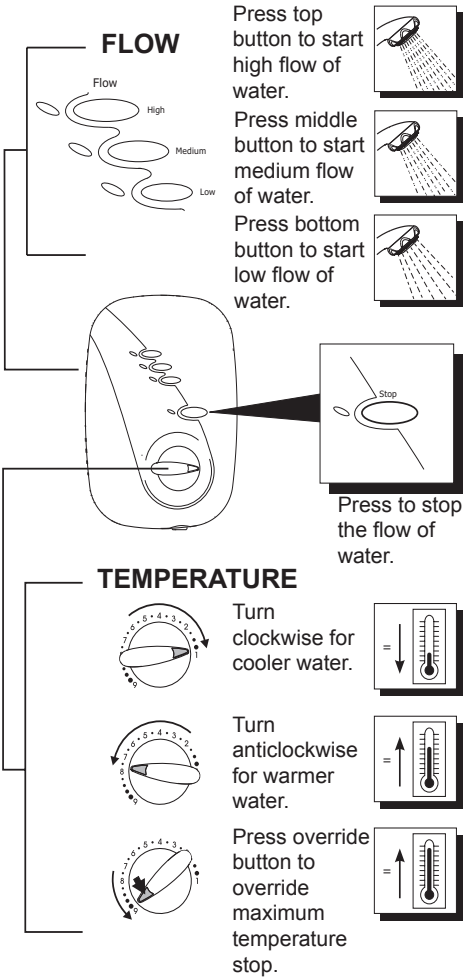
1.3 Turn the temperature control knob in the direction of the red indicator (anticlockwise) for warmer water and in the direction of the blue indicator (clockwise) for cooler water, until the desired temperature of water is achieved.

Warning! Operation of the override button will allow a shower temperature above the preset maximum.

1.4 To override the preset maximum temperature depress the override button and turn the temperature knob anticlockwise.

1.5 Press the **Stop** button to stop the flow of water.

Note! If the Mira Extreme is used continuously for a prolonged period the self-resetting thermal trip fitted to the appliance may operate. This will shutdown the pump motor and prevent it from overheating.


FLOW
Flow
High
Medium
Low
Press top button to start high flow of water.
Press middle button to start medium flow of water.
Press bottom button to start low flow of water.
Stop
Press to stop the flow of water.
TEMPERATURE
Turn clockwise for cooler water.
Turn anticlockwise for warmer water.
Press override button to override maximum temperature stop.

FAULT DIAGNOSIS

1. User Maintenance

The Mira Extreme is fully performance tested after assembly. Providing the Mira Extreme has been correctly installed and is operated as advised, difficulties should not arise. In the unlikely event that you experience problems with your appliance then the following procedure will enable you to undertake basic fault finding before contacting the person responsible for installing your shower.

Malfunction	Cause	Remedy
Maximum showering temperature too hot.	Maximum temperature incorrectly set.	Reset maximum temperature, refer to section: **'Commissioning'**.
Shower temperature too cold.	Hot water cylinder temperature less than 12°C above shower temperature.	Adjust cylinder temperature. **Note!** It is recommended that the stored water temperature does not exceed **65°C**.
	Maximum temperature incorrectly set.	Reset maximum temperature, refer to section: **'Commissioning'**.
Blend temperature unstable.	Spray plate blocked.	Clean spray plate. Refer to the Installation & User guide supplied with the shower fittings.
	Inlet filter blocked.	Contact your installer.
	Isolating valve partially closed.	Open valve.
	Plumbing system fault.	Contact your installer.
Pump does not operate.	Electrical supply failure.	Contact your installer.
	PCB failure.	Contact your installer.
	Motor overheated, thermal switch operated.	If the thermal switch operates repeatedly contact customer services for further advice.
Low or no water flow.	Isolating valves closed.	Open valves.
	Inlet filters blocked.	Contact your installer.
	Check valve fitted incorrectly.	Contact your installer.
	Appliance sited above cold water storage cistern.	The appliance is not suitable for negative head installations. Refer to section: **'Installation Requirements'**.
	Plumbing system fault (airlock).	Contact your installer.

2. Installer Maintenance

The Mira Extreme is one part of an entire plumbing system. The fitting of a pump places additional requirements on the plumbing system. Some systems may require plumbing modifications to allow them to cope with higher flow rates.

Providing the Mira Extreme has been correctly installed and is operated as advised, difficulties should not arise. Fault diagnosis and maintenance must be carried out by a competent person for whom the fault diagnosis table is provided.

In the event of any of the following tests failing, re-check as appropriate before contacting the Kohler Mira Ltd (our contact details can be found on the back cover of this guide).

Malfunction	Cause	Remedy
Shower runs for a short time (30-60 seconds) then flow reduces, splutters or stops. Aggravated when other hot taps are in use. Less evident on full cold.	Air is being sucked down the vent pipe, as the hot take off to the shower is too high up the pipe.	Refer to plumbing system diagrams in section: **'Installation Requirements'**. Note the 1 metre hot take-off dimension. Consider increasing cold feed pipe to cylinder to 28 mm diameter.
Shower runs cool after a short time (1–2 minutes) then flow splutters.	Air ingress into hot pipework.	Refer to plumbing system diagrams in section: **'Installation Requirements'**.
Flow of water virtually stops and surges on/off, after a few minutes.	Insufficient storage of cold water in cistern (230 litres recommended).	Increase storage of cold water cistern.
Shower runs cold after 5–10 minutes.	Insufficient storage of hot water in cylinder.	Increase storage of hot water.
Shower temperature affected by use of adjacent hot/cold tap.	Insufficiently sized pipework for both systems to be used together.	Increase pipe sizes or separately feed shower. Refer to plumbing system diagrams in the section: **'Installation Requirements'**.
Maximum shower temperature too hot.	Incorrect setting of maximum temperature.	Reset maximum temperature, refer to section: **'Commissioning'**.
Shower temperature too cold.	Maximum temperature incorrectly set. Hot water cylinder temperature less than 12°C above shower temperature.	Reset maximum temperature, refer to section: **'Commissioning'**. Adjust cylinder temperature. **Note!** It is recommended that the stored water temperature does not exceed **65°C**.

Blend temperature unstable.	Inlet filter blocked. Isolating valve partially closed. Spray plate blocked.	Clean filters.refer to section: **'Maintenance'**. Open valve. Clean spray plate. Refer to the Installation and User guide supplied with the shower fittings.
Drip from shower head.	Solenoid valve defective.	Renew the solenoid assembly.
Pump does not operate.	Electrical supply failure. PCB failure. Motor overheated, thermal switch operated.	Check power supply. Renew the PCB. If the thermal switch operates repeatedly contact Kohler Mira for further advice.
Pump speed does not change.	PCB failure.	Renew the PCB.
Low or no water flow.	Isolating valves closed. Inlet filters blocked. Check valve fitted incorrectly. Appliance sited above cold water storage cistern. Plumbing system fault (airlock). Blocked spray plate.	Open valves. Clean filters, refer to section: **'Maintenance'**. Check, refer to section: **'Maintenance'**. The appliance is not suitable for negative head installations, refer to section: **'Installation Requirements'**. Reroute the pipework to avoid airlock. Clean spray plate. Refer to the Installation and User guide supplied with the shower fittings.
Pump does not stop.	Microswitch failure. PCB failure.	Renew the harness assembly. Renew the PCB.

MAINTENANCE

1. General

Read the section '**Important Safety Information**' first.

If any maintenance is required then it must carried out by a competent tradesperson for whom the maintenance instructions are provided. Before replacing any parts make sure that the underlying cause of the malfunction has been resolved.

Warning! There are no user serviceable components beneath the cover of the appliance. Only a competent tradesperson should remove the cover.

2. Cleaning

Many household cleaners contain abrasives and chemical substances, and should not be used for cleaning plated or plastic fittings. These finishes should be cleaned with a mild washing up detergent or soap solution, and then wiped dry using a soft cloth.

3. Front Cover – Removal and Installation

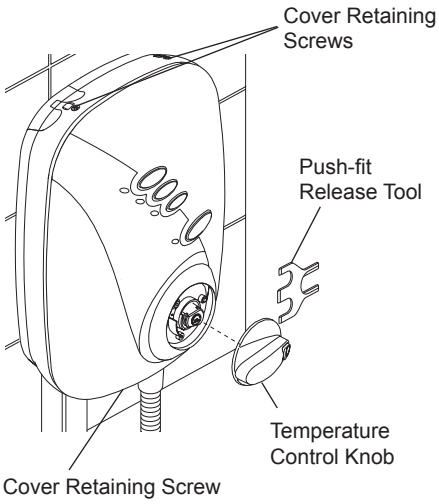
Warning! Before proceeding turn off the electrical and water supplies. The electricity supply must be turned off at the mains and, if applicable, the appropriate circuit fuse removed. Mains electrical connections are exposed when the cover is removed.

3.1 Insert the end of the push-fit tool under the temperature control knob, inline with the temperature over-ride button, and lever off the temperature knob.

3.2 Unscrew the three cover retaining screws sufficiently to remove the cover.

Note! The cover retaining screws are captive and need not be removed.

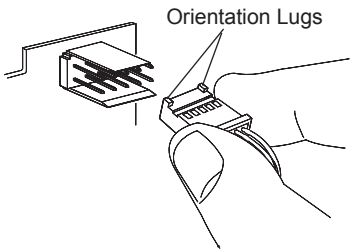
3.3 Lower the cover gently, taking care not to apply any stress on the electrical connections.



3.4 Remove the cover electrical connection from the PCB by gripping the sides of the connector between two fingers and easing the connector free by moving from side to side.

3.5 To replace the cover, reconnect the cover electrical connector and refit the cover. Secure the cover by tightening the three cover retaining screws. Refit the temperature control knob.

Note! Two lugs on the top of the connector are provided to ensure the correct orientation.

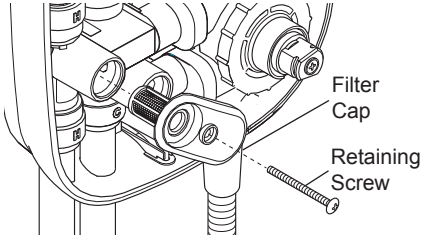


4. Inlet Filter Cap, Cleaning – Removal and Installation

The following procedure can be applied for cleaning or renewing the inlet filter cap or inlet filter cap 'O' seals.

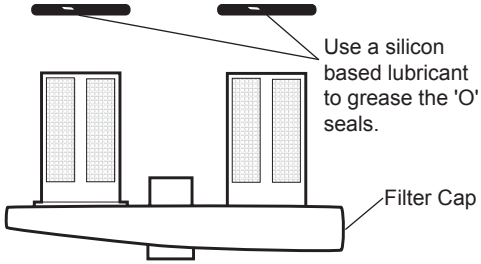
Warning! Before proceeding turn off the electrical and water supplies. The electricity supply must be turned off at the mains and, if applicable, the appropriate circuit fuse removed. Mains electrical connections are exposed when the cover is removed.

4.1 Remove the front cover, refer to section: **'Maintenance, 3. Front Cover – Removal and Installation'**.



4.2 Unscrew the retaining screw and remove the filter cap.
Note! A small amount of trapped water may drain from the manifold.

4.3 Thoroughly clean both the inlet filter meshes. Inspect the 'O' seals and renew if required. Before refitting the inlet filter cap lightly grease 'O' seals with a silicone based lubricant.



4.4 Refit components in reverse order.

4.5 Restore the water supplies and check for any leaks.

4.6 Refit the cover and secure with the three cover retaining screws, refit the temperature knob.

4.7 Restore the electrical supply.

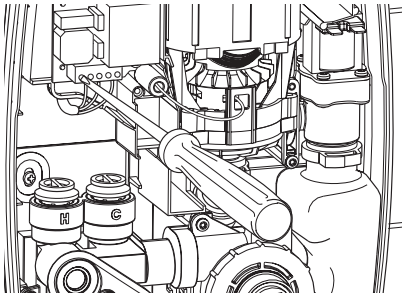
4.8 Commission the shower, refer to section: **'Commissioning**.

5. Inlet Manifold, Check Valve – Removal and Installation

The following procedure can be applied for cleaning or renewing the inlet manifold, inlet check valves or 'O' seals.

Warning! Before proceeding turn off the electrical and water supplies. The electricity supply must be turned off at the mains and , if applicable, the appropriate circuit fuse removed. Mains electrical connections are exposed when the cover is removed.

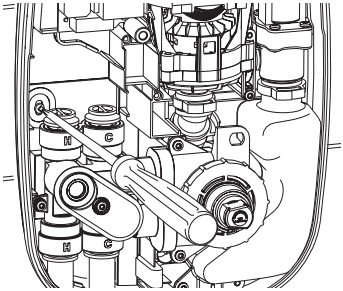
5.1 Remove the front cover, refer to section: **'Maintenance, 3. Front Cover – Removal and Installation'**.



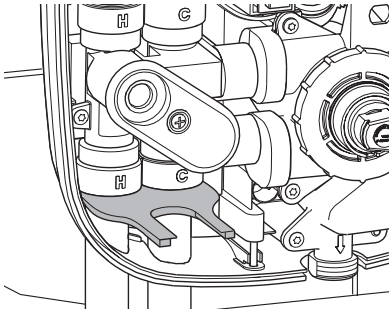
5.2 Disconnect the electrical supply cable from the terminal block.

5.3 Remove the flexible hose from the appliance.

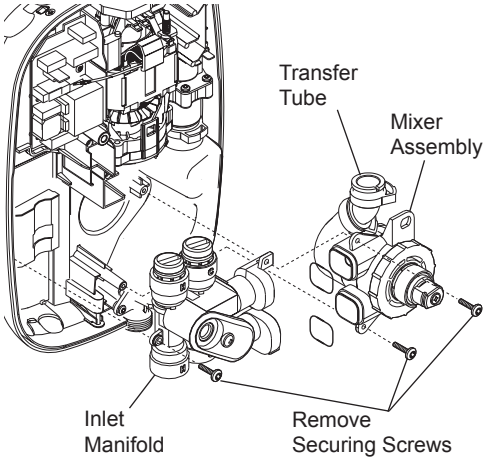
5.4 Remove the three wall fixing screws.



5.5 Using the push-fit release tool, push back and hold the collets from the supply pipework, lift the Mira Extreme from the wall to remove the supply pipework from the inlet manifold.



5.6 Remove the screws securing the inlet manifold and mixer assembly using a T10 Torx screwdriver. Unclip the pump transfer tube.

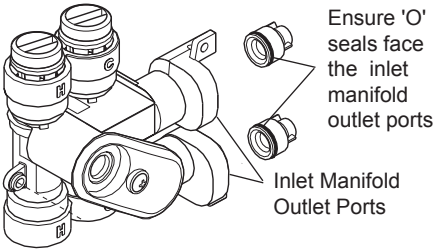


5.7 Remove the inlet manifold and mixer assembly.

5.8 The ports adjacent to the mixer assembly contain the inlet check valves. The check valves can be removed and replaced if required. Make sure that the check valve is inserted with the 'O' seal on the check valve facing into the outlet port of the manifold.

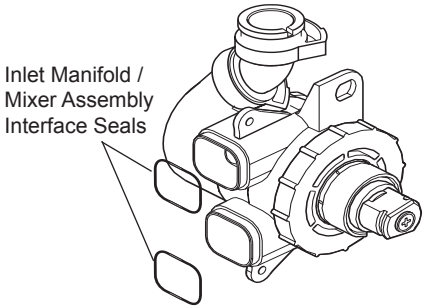
5.9 Inspect the inlet manifold/valve interface seals and renew if required.

Note! When refitting the inlet manifold, lightly grease seals with a silicone-based lubricant.



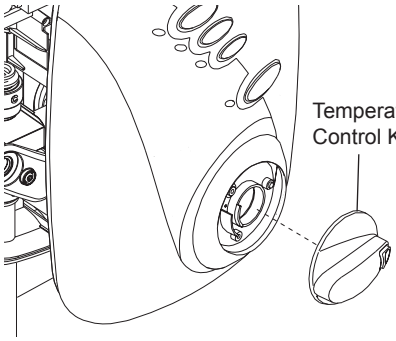
5.10 Refit components in reverse order.

5.11 Restore the water supplies and check for any leaks.

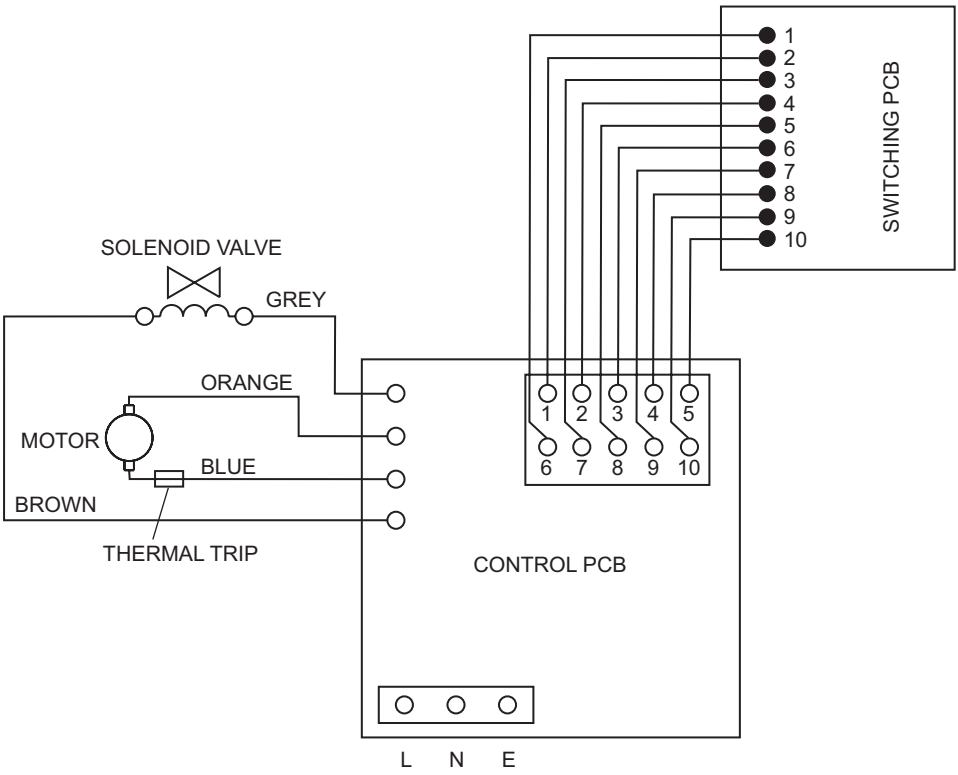


5.12 Re-connect the cover electrical connector and refit the cover. Secure the cover by tightening the three cover retaining screws. Refit the temperature control knob.

5.13 Commission the shower, refer to section: **'Commissioning'**.

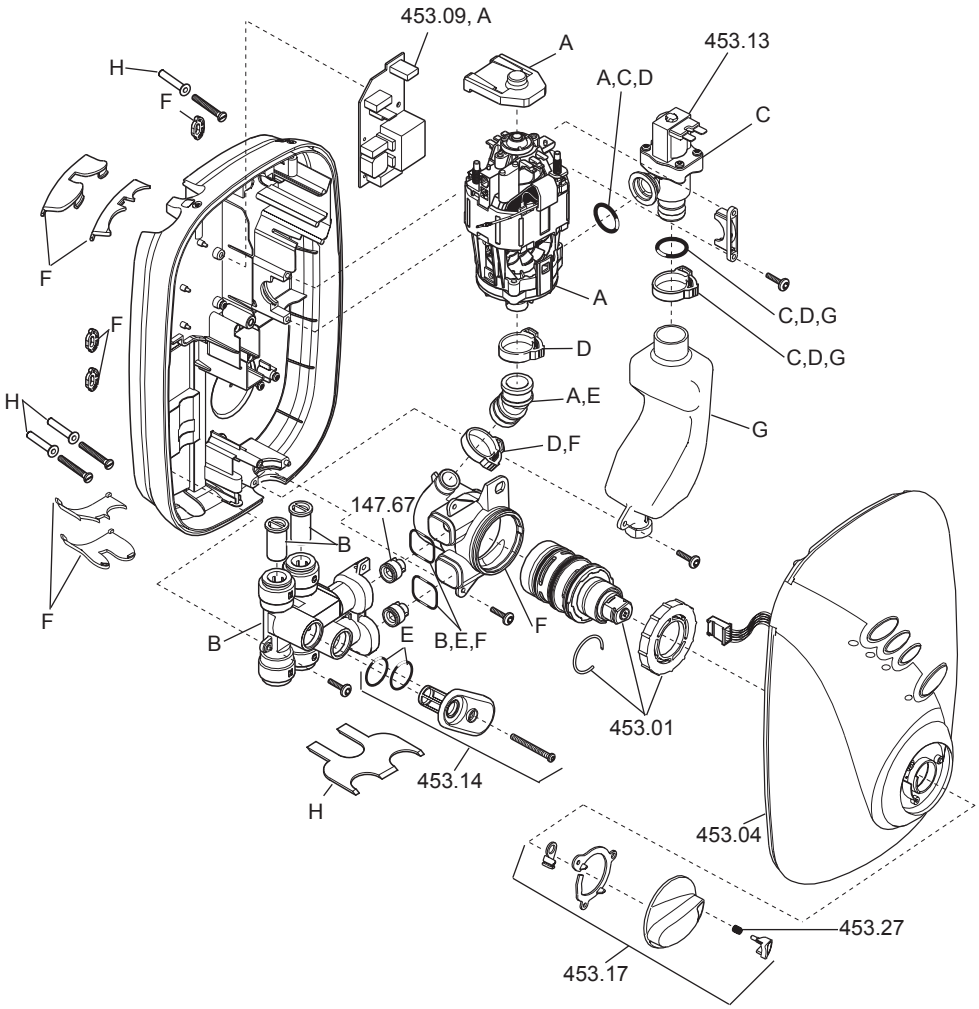


6. Wiring Diagram



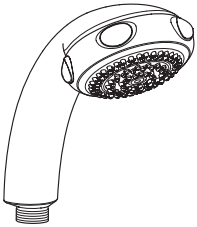
SPARE PARTS

147.67	Check Valve Pack
453.01	Cartridge – Thermostatic
453.04	Extreme Cover Assembly
453.07	Inlet Manifold Assembly – components identified 'B'
453.09	Extreme PCB Assembly
453.13	Solenoid Valve Assembly – components identified 'C'
453.14	Filter/Cap Assembly
453.15	Seal Pack – components identified 'D'
453.17	Extreme Temperature Knob Assembly
453.23	Mixer Valve Body– components identified 'E'
453.24	Inserts/Rubber Feet Pack – Power – components identified 'F'
453.26	Damping Vessel – components identified 'G'
453.27	Temperature Override Stop
1532.297	Stud Wall Fixing Kit – components identified 'H' – consisting of: 3 x Fixing Screws 3 x Rubber Wall Plugs Push-fit Release Tool
1532.363	Motor Pump Assembly – components identified 'A' (also includes PCB Assembly)

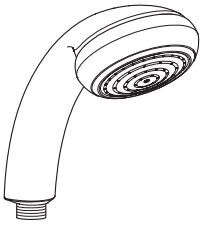

453.09, A
A
453.13
A,C,D
C
H
F
F
A
C,D,G
C,D,G
D
A,E
G
D,F
H
147.67
B
F
B
E
B,E,F
F
453.01
453.14
H
453.04
453.27
453.17

ACCESSORIES

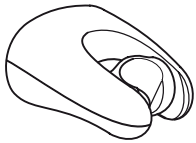
Genuine Mira accessories can be purchased direct from Customers Services (our contact details can be found on the back cover of this guide) or from approved stockists or merchants.



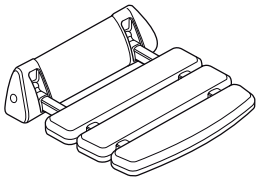
Eco Showerhead
White - 2.1668.001
Chrome - 2.1668.002
The Eco shower head gives you an invigorating shower, but reduces water consumption and heating costs.



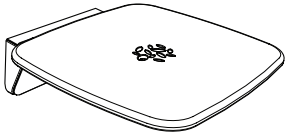
Everclear Showerhead
White - 2.1616.030
Chrome - 2.1616.031
Mira's new Everclear range has been specially designed for hard water areas and reduces the risk of lime scale build up.



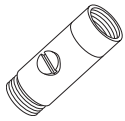
Logic Showerhead Holder
White - 2.1605.149
White/Chrome - 2.1605.150
An alternative to the traditional slide bar. Often a useful addition when positioned for the smaller members of the family.



Shower Seat
White - 2.1536.128
White/Chrome - 2.1536.129
For use in or out of the showering area. Folds up when not in use. Maximum User Weight - 127 kg (20 stone) **Note!** Must be installed onto a solid wall.



Premium Shower Seat
White/Chrome - 2.1731.001
Grey/Chrome - 2.1731.002
Stylish, slim-line and robust shower seat for use in or outside of the shower area. Folds up when not in use. Maximum User Weight - 150 kg (23.5 stone) **Note!** Must be installed onto a solid wall.



Double Outlet Check Valve (DCV-H)
Chrome - 1.0.110.55.1
An outlet double check valve, designed to prevent the back flow or back-siphonage of potentially contaminated water, through shower controls which are fitted with a flexible shower hose as part of the outlet shower fitting.

CUSTOMER SERVICE

Guarantee

Your product has the benefit of our manufacturer's guarantee which starts from the date of purchase.

To activate this guarantee, please return your completed registration card, visit our website or free phone 0800 0731248 within 30 days of purchase (UK only).

Within the guarantee period we will resolve defects in materials or workmanship, free of charge, by repairing or replacing parts or product as we may choose.

If you have not previously activated the guarantee, you will be required to do so prior to the provision of assistance. If you do not activate your guarantee our Engineer will be entitled to charge full payment for the visit (Call out fee plus parts).

This guarantee is in addition to your statutory rights and is subject to the following conditions:

- The product must be installed and maintained in accordance with the instructions given in this user guide.
- Servicing must only be undertaken by us or our appointed representative. **Note!** if a service visit is required the product must be fully installed and connected to services.
- Repair under this guarantee does not extend the original expiry date. The guarantee on any replacement parts or product ends at the original expiry date.
- For shower fittings or consumable items we reserve the right to supply replacement parts only.

The guarantee does not cover:

- Call out charges for non product faults (such as damage or performance issues arising from incorrect installation, improper use, lack of maintenance, build up of limescale, frost damage, corrosion, system debris or blocked filters) or where no fault has been found with the product.
- Water or electrical supply, waste and isolation issues.
- Compensation for loss of use of the product or consequential loss of any kind.
- Damage or defects caused if the product is repaired or modified by persons not authorised by us or our appointed representative.
- Routine maintenance or replacement parts to comply with the requirements of the TMV 2 or TMV 3 healthcare schemes.

What to do if something goes wrong

If your product does not function correctly when you first use it, contact your installer to check that it is installed and commissioned in accordance with the instructions in this manual. Should this not resolve the issue, contact our Customer Services Team who will offer you or your installer advice and if applicable arrange for a Service Technician to call. If the performance of your product declines, check in this manual to see if simple home maintenance is required. If you require further assistance call our Customer Services Team.

Extended Guarantees

A selection of protection plans are available that enable you to cover repair bills for the life of your policy (excludes Eire). Ring 01922 471763 for more details.

Helpdesk Service

Our dedicated Customer Services Team is comprehensively trained and can offer help and advice, spare parts, accessories or a service visit. We will need you to have your model name or number, power rating (if applicable) and date of purchase. As part of our quality and training programme calls may be recorded or monitored.

Mira Showers Website (www.mirashowers.co.uk)

From our website you can register your guarantee, download additional user guides, diagnose faults, purchase our full range of accessories and popular spares, refer to our FAQ's and request a service visit.

Spares and Accessories

We maintain extensive stocks of genuine spares and accessories and aim to provide support throughout the product's expected life. Payment can be made by phone at time of order using most major Credit or Debit cards and we aim to despatch orders within two working days. Items purchased from us are guaranteed for 12 months from date of purchase. For safety reasons spares exposed to mains voltages should only be fitted by competent persons.

Returns – items can be returned within one month of date of purchase, providing that they are in good condition and the packaging is unopened. Please obtain authorisation from our Customer Services Team before return. We reserve the right to apply a 15% restocking charge.

Service / Repairs

We have a nationwide team of Service Technicians who can carry out all service or repair work to your product within the guarantee period and beyond. You have the assurance of a fully trained Mira Technician, genuine Mira spare parts and a 12 month guarantee on any chargeable work done.

Payment should be made directly to the Service Technician who will accept most major Credit or Debit cards.

To Contact Us

UK

Telephone: 0844 571 5000

www.mirashowers.co.uk

E-mail: technical@mirashowers.com

Fax: 01242 282595

By Post: Mira Customer Services Dept, Cromwell Road, Cheltenham, Gloucestershire, GL52 5EP

Eire

Telephone: 01 459 1344

E-mail: sales@modernplant.ie

Fax: Dublin 01 459 2329

By Post: Modern Plant Ltd (Dublin), Otter House, Naas Road, Clondalkin, Dublin 22

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